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Cladonia, Lecanographa, Ochrolechia, and *Placidium* species new to Turkey

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Abstract—*Cladonia dahliana, Lecanographa grumulosa*, *Ochrolechia inaequatula* and *Placidium imbecillum* are reported for the first time from Turkey. For each species a short description is presented.

Key Words—biodiversity, biota, Giresun, lichen, new record

Introduction

Studies on the lichen biota of Turkey are not as extensive as in many European countries. In the last two years, many new lichen species were reported for the lichen biota of Turkey (e.g. Candan & Özdemir Türk 2008, Çobanoğlu et al. 2008, Halici & Aksoy 2009, Kinalioğlu 2009, Öztürk & Güvenç 2010, Yazici & Aptroot 2008). So far a total of 518 species have been reported from Trabzon and 431 from Giresun province. The present paper is a further contribution to ongoing lichens exploration in the country.

Materials and methods

Specimens were collected in Trabzon and Giresun provinces between year 2005 and 2007. They were identified with various lichen guides (e.g. Brodo et al. 2001, Purvis et al. 1992, Wirth 1995) and determined by H. Sipman. Vouchers are preserved in the herbarium of the Faculty of Science and Arts, Giresun University, Giresun, Turkey; with some duplicates in personal herbarium of H. Sipman. The accession numbers of the collections are given in parentheses after the locality details.

Species recorded

Cladonia dahliana Kristinsson Fig. 1

Primary thallus squamulose dominant, 1–5 mm broad, 3–10 mm long, incised, the surface mostly finely rugose, greenish above, white below. Podetia

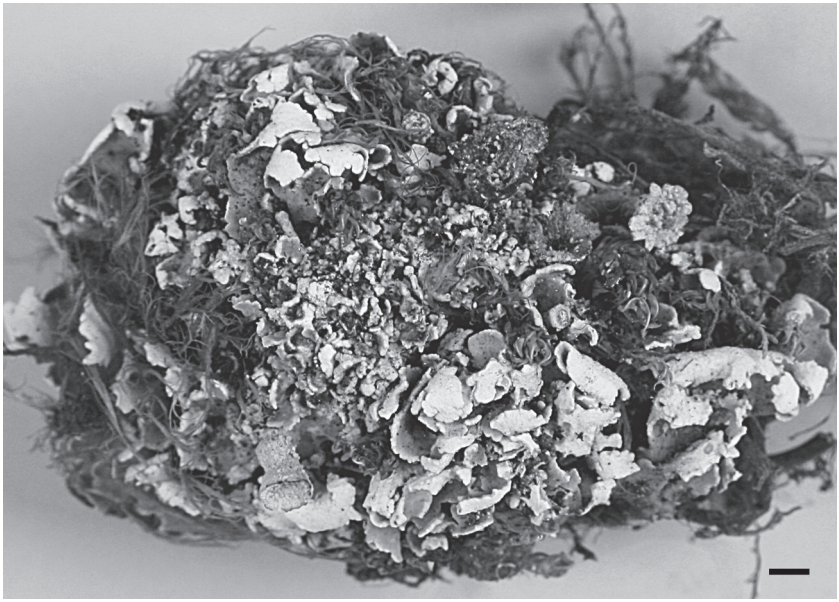

Fig. 1. *Cladonia dahliana*, habitus. Scale: 1 mm.

up to 4–5 mm tall, corticated, green, gradually tapered towards base. Cups to 4 mm wide, generally dentate at the rim. Apothecia brown, on the cup margins. Medulla K+ yellow, PD+ yellow.

Specimen examined: Giresun, Dereli, Karagöl mountains, 40°35'51"N, 38°10'30"E, 3050 m, 29 Jul. 2007, on soil, *det. H. Sipman, (Kınalıoğlu* 1575*).*

Known from Iceland, Greenland, Baffin Island on the steep soil banks and hillsides or in the steep sides of snow patches facing south (Kristinsson 1974). In Turkey the specimen was collected from soil at high altitude.

A detailed description of northern European material is provided by Kristinsson (1974).

Discussion: The Turkish material differs from the northern European specimens by having podetia and a wider primary squamulose thallus.

Lecanographa grumulosa (Dufour) Egea & Torrente Fig. 2

Thallus crustose, greyish, mostly thick, cracked-areolate. Apothecia 0.3–1.5 mm diam, black, sessile when old, roundish to ellipsoid: disc plane, white pruinose, crenulate margins. Asci 8-spored, grumulosa type. Ascospores 13–18 × 3–4 µm in size, colourless, 3–4-celled when young and 5–6-celled when mature. Pycnidia not observed. Thallus and apothecial pruina C+.

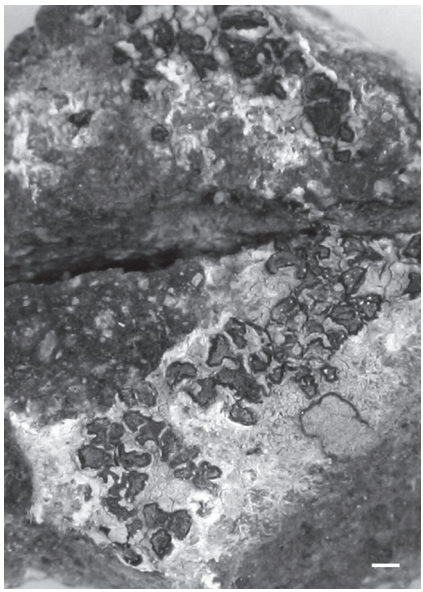

Fig. 2. *Lecanographa grumulosa*, habitus. Scale: 1 mm.

Specimen examined: Giresun, Gülburnu, sea shore, 40°57'50"N, 38°39'14"E, 1 m, 10 June 2006, on siliceous rock, det. H. Sipman, (Kınalıoğlu 1462). Giresun, Keşap, Değirmenağzı village, 40°58'2"N, 38°38'33"E, 12 m, 12 Dec. 2006, on siliceous rock, det. H. Sipman, (Kınalıoğlu 1511).

Known from Europe on dry ± calcareous rocks and mortar, often on sheltered underhangs and shaded walls (Purvis et al. 1992, Egea et al. 1993). In Turkey the specimens were collected only from siliceous rock.

A detailed description of European material (as *Lecaxanactis grumulosa*) is provided by Purvis et al. (1992) and Egea et al. (1993).

Discussion: The Turkish representatives of *Lecanographa grumulosa* differ from European specimens by larger apothecia and slightly larger ascospores. (Egea et al. (1993) cite ascospores as 12–17(–19) × 3–4) μm, although Purvis et al. (1992) list sizes up to 14–23 × 3–4(–5) μm). The Turkish collection differs ecologically in occurring only on siliceous rock at coastal localities.

Ochrolechia inaequatula (Nyl.) Zahlbr. Fig. 3

Thallus thick, uniformly grey-white. Soralia to 1.5 mm diam., sorediata coarse. Photobiont chlorococcoid. Apothecia not observed. Thallus PD+ pale orange.

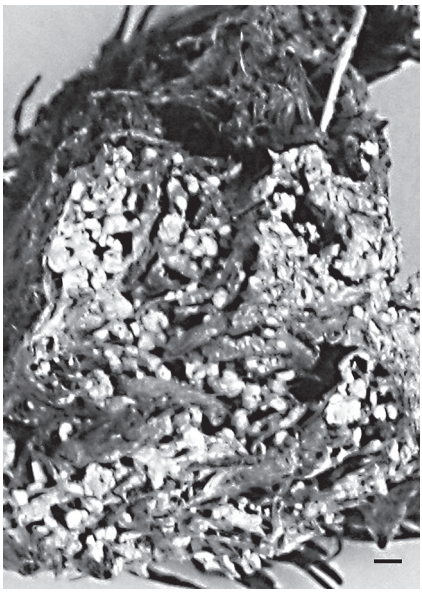

Fig. 3. *Ochrolechia inaequatula*, habitus. Scale: 1 mm.

Specimen examined: Trabzon Araklı, S of Kızılkaya Yaylası, 40°40' 21"N, 40°01'24"E, 2350 m, 18 Aug. 2005, on moss, *det. H. Sipman, (Kınalıoğlu* 1474*).*

Known from Scotland and Scandinavia on the bryophyte mats on exposed mountain ridges and on tops of boulders (Purvis et al. 1992). In Turkey the specimen was collected from moss at high altitude.

A detailed description of British material is provided by Purvis et al. (1992).

Discussion: The soralia are smaller in the Turkish specimen than in the British material. Original descriptions of this species report soralia up to 2–3 mm diam. (Purvis et al. 1992).

Placidium imbecillum (Breuss) Breuss Fig. 4

Thallus squamulose, squamules 3–5 mm wide, adpressed to the substratum, dark brown or with a reddish tinge. Perithecia frequent, black, half immersed. Ascospores *colourless*, 13–17 × 6–7.5 µm. Thallus C–, K–, KC–, PD–.

Specimen examined: Trabzon, Araklı, SE of Paskalar Yaylası, 40°40'03"N, 40°01'41"E, 2400 m, 17 Aug. 2005, on soil, det. H. Sipman, (Kınalıoğlu 1471)

Known from western Europe (Austrian Alps) and several isolated stations in southern Europe on soil (Nimis & Martellos 2004, Breuss 1990). In Turkey the specimen was also collected from soil.

A detailed description of Italian material (as *Catapyrenium imbecillum*) is provided by Nimis & Martellos (2004).

Discussion: The squamules and ascospores of the Turkish material are slightly smaller than in the Italian collection. In the Italian specimen the squamule sizes are (2)3–6 mm wide, and the ascospores sizes are (12)14–18 ×6–8 µm.

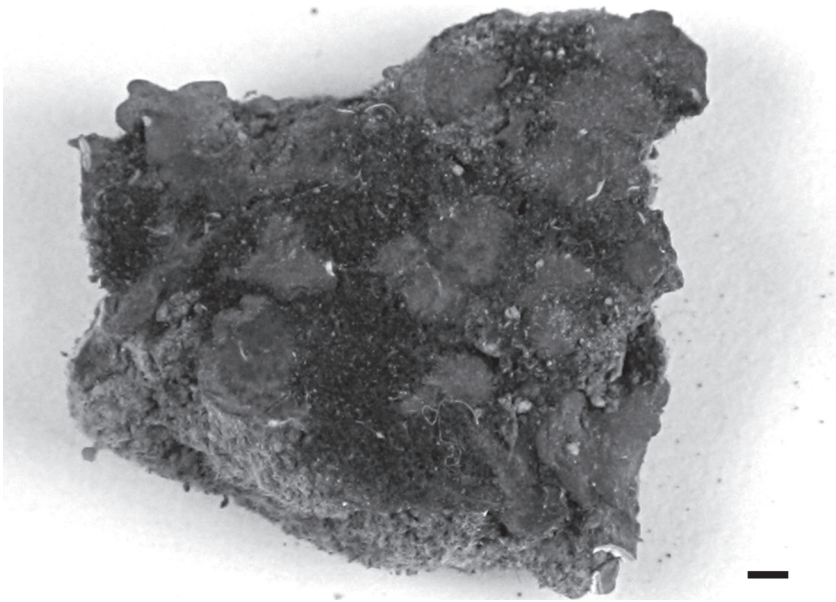

Fig. 4. *Placidium imbecillum*, habitus. Scale: 1 mm.

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